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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,869	01/28/2005	Akio Taniguchi	5404/95	5235

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EXAMINER

MULLIS, JEFFREY C

ART UNIT PAPER NUMBER

1711

DATE MAILED: 12/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/522,869

Applicant(s)

TANIGUCHI ET AL.

Examiner

Jeffrey C. Mullis

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,6-8,11,16,17 and 30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-8,11,16,17 and 30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

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All previous rejections are hereby withdrawn.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2,3, 6-8, 11,16, 17 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US 7,067,586).

Patentees disclose an ABA block copolymer with at least one random block having at least one hydrophobic and at least one hydrophilic monomer (abstract and patent claim 1) such as methoxyethylacrylate and n-butyl acrylate (column 17, lines 45-49). Maleic anhydride (which would result in units of applicants structure "(1)" with  $n=0$ ) may be used also to produce the block copolymer at column 18, line 1. Note the examples in Table 1 wherein the (copolymeric "B" block is methoxyethylacrylate and tert butyl acrylate (taught to be equivalent to n-butyl acrylate by patentees) while the "A" block is dimethylacrylamide, taught to be equivalent to methylmethacrylate by patentees (see patent claim 13). The number and weight average molecular weight ranges disclosed by patentees at column 8, lines 15-30 imply a polydispersity of 1-1.4 for the component blocks given a disclose "A" block number average molecular weight range of 80-500,000 and weight average of 80-700,000. Furthermore the sorts of processes used by applicants and patentees are the same and furthermore known in the prior art and polydispersities typical of those processes would be assumed by those skilled in the art for applicants and patentees copolymers. While there are no examples of block

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copolymers having all of applicants' limitations in combination including applicants choice of monomers. However, choice of such from the various disclosures of the patent would have been obvious to a practitioner having an ordinary skill in the art at the time of the invention in the expectation of adequate results absent any showing of surprising or unexpected results.

Claims 1-3, 6-8, 11,16, 17 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frechet (US 2004/0096411).

Frechet disclose a block copolymer containing an internal block (referred to by Frechet as a "core polymer") which is a random copolymer of two or more monomers which may include butyl acrylate, methoxyethylacrylate and ethyl acrylate (paragraph 58) while the adjacent bloc may comprise methylmethacrylate (paragraph 57). Maleic anhydride may be used in paragraph 55. Applicants molecular weights are disclosed in paragraph 30 and applicants polydispersities can be deduced from the ranges disclosed.

. Furthermore the sorts of processes used by applicants and patentees are the same and furthermore known in the prior art and polydispersities typical of those processes would be assumed by those skilled in the art for applicants and patentees copolymers. While there are no examples of block copolymers having all of applicants' limitations in combination including applicants choice of monomers. However, choice of such from the various disclosures of the patent would have been obvious to a practitioner having

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an ordinary skill in the art at the time of the invention in the expectation of adequate results absent any showing of surprising or unexpected results.

It is noted that the above prior art only suggest applicants units "1" wherein  $n=0$ , not 1-3. Also, block copolymers having 0.1-99.9 anhydride groups formed from (meth)acrylate cyclization is not suggested. It is not necessarily the position of the examiner that such an limitations have support in the specification as filed and applicants should point out support for any amendment they make in response to this Office action.

The examiner regrets the above new grounds of rejection.

Any inquiry concerning this communication should be directed to Jeffrey C. Mullis  
m-f, 9-5 PM at telephone number 571 272 1075.

Jeffrey C. Mullis  
J Mullis  
Art Unit 1711

JCM

12-3-06

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